

SELF-ESTEEM AND SOCIAL ADAPTATION
OF CHILDREN SUFFERING FROM LEUKAEMIA

A Thesis
Submitted To
The Graduate School
The Chinese University of Hong Kong

In Partial Fulfilment
of the Requirements for the Degree of
Master of Social Science
in Clinical Psychology

by
Tong Sau Lan
Division of Psychology
June 1992

UL

360340

thesis
WS
105.5
A8T67



ABSTRACT

This study aimed at investigating the self-esteem and social adaptation of the Chinese children suffering from leukaemia. It was hypothesized that, due to their illness, the leukaemic children would have poorer self-esteem and lower level of social adaptation than the normal non-ill children.

Twenty three leukaemic children, in the remission phase of their illness aged 7 1/2 to 11 1/2, were eventually included in the patient group. A total of 99 normal non-ill school children served to be the control group.

The Anxiety-Trait scale of the State-Trait Anxiety Scale was used to measure the subjects' trait anxiety before they participated in the study so as to control the confounding effect of trait anxiety on the studied variables of self-esteem and social adaptation. The Adaptive Behavior Inventory for Children (ABIC), a parent report measure consisted of six subscales of Family, Community, Peer-relation, Non-academic school, Earner-consumer, and Self-maintenance, was used to measure the level of social adaptation of the subjects. Their level of self-esteem was measured by the Self-Esteem Inventory (SEI).

Results showed that the leukaemic children did not score significantly poorer than the control group in the SEI. However, they did score lower in the ABIC, mainly in the areas of Community, Family and Peer-relation subscales. Pearson correlation was done and no significant age or sex difference was found in self-esteem and social adaptation either in the leukaemia patient group or non-ill comparison group. Results were discussed and the importance of family functioning as a mediating variable in the leukaemia children's social adaptation was highlighted. The limitations of the study were also looked at.

ACKNOWLEDGEMENT

I would like to express my deepest gratitude to my thesis committee members who have helped me in completing this thesis. My thesis supervisor, Dr. M.W. Chan-Ho, lecturer in the Department of Psychiatry, my research tutor Dr. David Chan, lecturer in the Department of Education, and Dr. T.K. Lam, lecturer in the Department of Paediatrics have been sincerely helping throughout the process and whose advice was unfailing. Thanks are also extended to Dr. J. Sachs, Dr. F. Cheung, and Dr. R. Andry who have given me practical and emotional support.

I also thanked the leukaemia children and their parents in participating in the study. Thanks are also extended to the school principal, teachers, the students and their parents of the primary school.

Lastly, I would like to thank all my classmates who have encouraged me to complete this thesis.

Tong Sau Lan

June, 1992.

STATEMENT OF ORIGINALITY

This is to state that the participants of the present study came from two sources : the Prince of Wales Hospital, Department of Paediatrics, and a primary school in Fan Ling, the New Territories in between March and June, 1990. The design, implementation, statistics and writing up of the study is entirely done by myself.

undersigned: Tong Dan Lam

Date: 30.6.1992

TABLE OF CONTENTS

ABSTRACT	ii
STATEMENT OF ORIGINALITY	iv
ACKNOWLEDGEMENTS.....	v
TABLE OF CONTENTS	vi
LIST OF TABLES	vii
LIST OF FIGURES.....	viii
LIST OF APPENDICES	ix
INTRODUCTION	1
CHAPTER I - UNDERSTANDING OF THE ILLNESS LEUKAEMIA.....	3
Leukaemia: its symptoms, treatment and side effects on children	3
The changing outlook of treatment	7
CHAPTER II - RESEARCH STUDIES ON LEUKAEMIC PATIENTS ...	10
Previous and changing research studies emphasis with leukaemic children	10
Psychological and behavioral relevances: social adaptation, self-esteem, and anxiety	14
Research studies on Chinese leukaemic children ...	27
CHAPTER III -METHOD	30
CHAPTER IV - RESULTS	40
CHAPTER V - DISCUSSION	56
REFERENCES	68
APPENDICES	76

LIST OF TABLES

Table 1.	Total number and sex of the child subjects	41
Table 2.	Age of the child subjects	42
Table 3.	Education of the child subjects	44
Table 4.	Mean age of education of the two groups	45
Table 5.	Education level of adult subjects	46
Table 6.	Means and standard deviation of Trait-Anxiety Scale	48
Table 7.	Means and standard deviation of Self-Esteem Inventory	50
Table 8.	Means and standard deviation of the two groups on Adaptive Behavior Inventory for Children (ABIC)	51
Table 9.	Univariate F-tests of the two groups on subscales of ABIC	53
Table 10.	T-test results on social adaptation between leukaemic children with higher and lower self-esteem	55

LIST OF FIGURES

Figure 1. Illustration of variables and focus of the study	32
Figure 2. The names of the measurement scales used	39

INTRODUCTION

This study arose out of my placement in the Prince of Wales Hospital during which I had opportunities to contact some children suffering from leukaemia in remission phase and their family members. What strikes me most is that apart from their having to regularly attend medical follow-ups to keep their illness under control, these children did not appear different from their ordinary non-ill contemporaries. Being in remission phase, their illness and its side effects did not leave any lasting apparent physical disabilities on them. On the other hand, if one zooms in to the details of functioning, it is not uncommon for parents of these children to report on their children's behavioral problems, either at home or in school. It seems that leukaemia's effect on children during a remission phase is on the psychological and behavioral level rather than on the adaptation of physical abilities or disabilities. Hence the psychological well being of these patients during remission becomes an interesting and important issue.

This study focuses on the social adaptation and self-esteem of the children suffering from leukaemia as an indicator of well being. The theme of social adaptation is chosen for the obvious reason that no man is able to live in a social vacuum and, very often, social adaptation is used as one of the many

indicators of a person's well being. In abnormal psychology, deviation from social norms and maladaptiveness of behaviours are, in fact, some of the criteria in assessing a person's normality (Davison and Neal, 1986). Often, people seek professional assistance because there has been a breakdown in their social adjustment (Hollis and Woods, 1981). In my limited clinical experience, it is noticed that children often express their ailments through their behaviours rather than words. These behaviours are more readily observable by their significant others, for example, their care-takers. The focus of self-esteem is chosen because it is significant to a person's sense of well-being (Rogers, 1951; Coopersmith, 1967; Epstein, 1973). In addition, it can influence a child's future health through its relationship with the child's illness orientations. It is one of the few significant predictors of young adult's health behaviour (Mechanic, 1980). According to Lewis and Lewis (1982), elementary children with poor self-concept displayed inappropriate medical care utilization. As total compliance with medical treatment is extremely important in maintaining the leukaemic children in remission, therefore self-esteem of these children would be a meaningful variable to study to shed light on their coping with life with an illness.

CHAPTER I

UNDERSTANDING OF THE ILLNESS LEUKAEMIA

To begin with, it is necessary to have a basic understanding of the illness leukaemia as this study is concerned with children's adjustment to the suffering of this illness. The following content is divided into two parts. Firstly, it would outline what leukaemia is, what it means to have the illness, and its severity. The second part is its changing outlook for recovery which is related to the changing emphasis in research studies with leukaemia.

Leukaemia : its symptoms, treatment and side effects on children

Leukaemia is a malignant disease of leukopietic tissues found in many species. It affects the white blood cells. Patients with leukaemia may have tremendous numbers of abnormal lymphocytes, but these cells are almost all immature or otherwise incapable of normal function. The marrow and other reticuloendothelial organs are eventually overgrown by neoplastic cells with replacement of normal blood-forming elements. These malignant leukocytes circulate freely in the blood and lymph, and permeate, colonise, and proliferate in the connective tissue of almost all organs. This results in enlargement of these organs (Eiser,1979).

Leukaemia can be grossly classified into two types : acute and chronic leukaemia. Acute leukaemia is a cancer of the white blood cells leading to replacement of normal bone marrow elements by undifferentiated or immature cells termed blasts. Chronic leukaemia is malignant proliferation of more differentiated or mature cells. Regardless whether it is acute or chronic leukaemia, as the number of these abnormal cells increases, they accumulate in the body. Bone marrow, lymph nodes, liver, spleen, kidney, brain, gonads, lungs and skin can become involved over days to weeks if the disease is not treated.

The cause of leukaemia has not been completely determined. It can be induced by irradiation or x-rays. Genetic and psychological factors have also been implicated. The etiology apparently involves multiple influences (Eiser, 1979).

The clinical presentations of the illness varied. Important symptoms include lassitude, shortness of breath, spontaneous bruising, and proneness to infections. Lam and Yuen (1987) reviewed the clinical presentation of seventy children with acute lymphoblastic leukaemia in Hong Kong. Fever (64%) and pallor (56%) were the two most common presenting symptoms followed by bone pain (42%) and lassitude (42%).

There are several common complications of leukaemia. These include anaemia, thrombocytopenia, infections, bone pain, kidney problems, and gonadal involvement.

With the initiation of treatments, side effects of the drugs would be apparent particularly during the induction phase of treatment. The kinds of side effects are dependent upon the specific type of drug prescribed. Examples of these side effects are pain in arms, legs, jaw or tummy, hair loss, moon face, poor appetite and nausea, burning pain and blister where the needle went in if any drug leaked out while shot is given.

Apart from this, the immunity of the leukaemic children is much lower than the normal children. In other words, they contract other diseases easier and are prone to infection. It is sometimes dangerous, even life-threatening, for them to contract such disease as measles (Vander, Sherman & Luciano, 1988). In reality, infection is an important cause of death in children with leukaemia (Hughes, 1971).

Diagnosis of the illness is made by examination of blood and bone marrow. However, as the symptoms are so varied, the diagnosis of acute leukaemia in all patients had to be established beyond any doubt by bone marrow aspiration.

In children, acute leukaemia predominates. Most of the children are between two and eight years old when the disease is diagnosed (Baker, 1978). The disease is rapidly fatal if not treated.

In the United Kingdom, acute lymphoblastic leukaemia accounts (ALL) for almost 85% of leukaemia cases in childhood (Pierce, Borges, Heyn, Wolff, & Gilbert, 1969). In the United States, ALL is also reported to be the most frequently occurring malignant disorder in childhood (Baehner, 1978). This type of leukaemia accounted for almost 80 percent of childhood leukaemia (Baehner, 1978; Lam and Yuen, 1987). Higher incidence is found in white children (Berry, 1974), Down's syndrome children and their siblings (Kucera, 1971), and males (Gunz and Baikie, 1974; Berry, 1974).

In Hong Kong, malignant neoplasms is the second leading cause of childhood mortality from the year 1985 to 1989 (Hong Kong Annual Digest of Statistics, 1986-1990). It is similar to the USA that acute lymphoblastic leukaemia (ALL) is also the most frequently occurring malignant disorder in childhood (Lam and Yuen, 1987). In the year 1985, the approximate annual incident rate is about 4 per 100,000 children. Overall long term survival was about 48 percent. Boys were more commonly affected than girls (Berry, 1974; Lam and Yuen, 1987; Hong Kong Annual Digest Of Statistics, 1985-1990). Better survival of up to 70% are now reported with effective treatment regimens.

The changing outlook of treatment

The whole treatment process of leukaemia can be roughly divided into the induction and maintenance phase. Since prolonged disease-free survival and subsequent cure depends on the rapidity and thoroughness of cytoreduction (Lampert, Henze, Langermann, Schellong, Gardner, & Riehm, 1984), the main idea of treating leukaemia is to quickly get the patient into remission by a process called induction which aims at eradicating the abnormal cells. Once the patient gets into a good remission, he will be put on the maintenance therapy whose job is to keep the patient in remission.

There is some misunderstandings in the general public that cancer in children is incurable. In fact, this is not true. The curability of the disease depends on several factors including the type of cancer, severity of the illness at discovery, and compliance to medical treatment of the patient. Nonetheless, as the cause of leukaemia can not yet be firmly established, there is no way to prevent its occurrence. However, total drug compliance is necessary and is able to reduce the chance of its relapse which, if once occur, it usually has a fatal outcome.

Generally speaking, the children suffering from leukaemia would need to be hospitalised for two to three months for

intensive treatment during induction phase when the illness is initially discovered. They may recover after a two to three years of maintenance treatment to maintain them at remission. During this period of time, the afflicted child needs to regularly attend medical follow up and closely follow medical advice on medication.

The child in complete remission should be in good general health with no evidence of leukaemia on bone marrow examination. Nonetheless, the course of the illness may be erratic and marked by remission and relapses.

Nowadays, it is rare that doctors use only one form of treatment to treat childhood leukaemia. A combination of chemotherapy and radiation therapy may be used. As reported in a study done in Hong Kong, a combination of chemotherapy and specific prophylactic therapy to the central nervous system is the mainstay of treatment in acute lymphoblastic leukaemia (Lam and Yuen, 1987).

Due to the advent of intensive combination of treatment modalities, some kinds of childhood cancer become curable and childhood leukaemia survival rate have improved noticeably. In the United States, prior to 1970, childhood acute lymphoblastic leukaemia (ALL) had a five-year survival rate of less than 10

percent (Bleyer and Griffin, 1980). According to the Surveillance, Epidemiology and End Results (SEER) programme of the National Cancer Institute, 62 percent of white children under 15 years of age diagnosed with cancer between 1977 and 1983 survived at least five years after treatment, compared with only 28 percent diagnosed between 1960 and 1963 (JAMA, 1988). Chance of five-year survival increased to more than 50 percent by 1980 (Bleyer and Griffin, 1980). It is estimated that by 1990, one of every 1,000 Americans at 20 years of age will be able to claim to have beaten cancer (JAMA, 1988). For a leukaemic child, there are 60 to 70 percent of chance that the disease would be cured. To sum up the situation, the advent of medical treatment enhance their survival rate and lengthen their life expectancy.

Following the above discussion, it is obvious that the children suffering from leukaemia have to adjust to firstly, the trauma of diagnosis. Also, they have to fight for their lives, all of which is heavily taxing to a person's life and psychic energy. The stress during this early period of adjustment is immense and drastic. Nonetheless, it is relatively shorter, hence more tolerable. During remission phase, they have to keep up with their lives and daily living. In other words, the long remission time is a long road of adjustment. This is the point of time selected for the present study as the battle is long and drawn-out.

CHAPTER II

RESEARCH STUDIES ON LEUKAEMIC PATIENTS

Previous and changing research studies emphasis with Leukaemic Children

As mentioned earlier, some twenty years ago, childhood cancer was considered invariably fatal. The lag between diagnosis and death was brief. The chance of recovery of a leukaemic child was low. Hence, parents of leukaemic children were counselled in ways of preparing for the death of the child. Psychosocial concern was drawn to two aspects: firstly, helping the parents prepare the child for death, and secondly preparing parents for a life without the child. A major concern was whether or not to tell the child about the impending death, and at what age. As a result, the main concern of researchers had been on the child's understanding of the possible fatal nature of the disease and their parents' coping with the impending death of their children. It is not surprising, therefore, these became the two main themes amongst the studies with the leukaemic children at that time.

In research endeavour with the leukaemic children, the results of a number of studies seem to show general agreement that young leukaemic children are not only able to understand the

seriousness of the illness, but are also emotionally affected by it. For instance, employing projective and indirect techniques to probe children's fears, researchers have reported that the 6- to 10-year-old children could be aware of the fatal aspect of the disease and could verbalise these fears in some situations (Binger, 1969; Spinetta and Maloney, 1975).

Waechter (1968, 1971) compared 6-10 years old children with a fatal illness including leukaemia with children with non-fatal chronic illness, brief illnesses, and normal, non-hospitalised children. He found that fatally ill children were much more anxious than children with a chronic disease. The former group overtly expressed more death themes and concerns with threats to and intrusion into their bodies and interference with normal body functioning. Waechter's finding pointed to the strong possibility that children aged 6-10 years old with a fatal prognosis not only were aware that they were dying, but could express that awareness by actual use of words relating to death.

Spinetta, Rigler, and Karon (1973) compared 25 children aged 6-10 years old with leukaemia with 25 children suffering from chronic non-fatal diseases by using a story-telling task and an anxiety questionnaire. Although children with leukaemia did not make overt reference to death, they did show greater awareness of threat to body integrity and functioning, and also expressed greater anxiety regarding hospital and home, than children with chronic disease. In addition, heightened anxiety among children

with leukaemia compared to those with chronic diseases also applied when the children were treated on an out-patient basis rather than in hospital (Spinetta and Maloney, 1975).

All in all, these studies showed that researchers agreed that the threat of bodily integrity was a major concern for the leukaemic children aged 6-10, regardless of whether or not he was informed of the diagnosis. In addition, they concluded that it was also important to help the children cope, not only when they were being treated in the hospital, but also when they were living at home and being treated in out-patient clinic (Nattersen and Knudson, 1960; Spinetta et al., 1973; Eiser, 1979).

As clearly evident in these studies, the focus of research emphasis with leukaemic patients at that time is mainly on the patients' comprehension of the fatal nature of the illness, with an implicit meaning that this would help the patients and their families cope with their impending death. This theme is closely related to the unfavourable outlook for recovery of these patients.

Contrast to some twenty years ago when childhood leukaemia was considered to be invariably fatal, nowadays, it has become a curable disease for the majority of patients. From all fronts there come news of improvements in life expectancy for children which only twenty years ago would have proved swiftly fatal but is now yielding to research endeavour and improved treatment techniques (Dobbs, 1970; Till, Hardisty, & Pike, 1973).

As the chances of survival of the leukaemic children are higher and their survival period longer, the psychosocial problems faced by them changed as well. As noted by Thompson, E. (1988), "As cancer has become much more of a chronic illness, now we can focus on the late effect" (JAMA, 1988). In other words, the patient and the family have now to cope with the impact of the disease. In this connection, the past research emphasis seemed to be unfit for current changing psychosocial problems faced by the children and their families. Subsequently, there is a change in emphasis from one of preparing the patient and the family for death to one of preparing for life.

In fact, the problem of maintaining these children in a normal happy state is both growing in size and complexity. Not only are more sick children continuing to live, albeit on constant treatment, but each individual patient is also being faced with the task of coping with his illness over a longer period. In such circumstances, it becomes crucial to review the quality of the life provided. There would seem little value in offering good quality physical life if one cannot also offer viable psychological survival (Burton, 1975).

A person's 'coping' means action-oriented as well as intra-psychological attempts to control and handle environmental and internal needs, and the conflicts between them, which will heavily tax the individual's mental reserves (Cohen and Lazarus, 1979). Hence, it is important to look at the effects of the disease upon their day-to-day functioning, as opposed to emphasizing inferred psychologic deviance (Kellerman, Zeltzer, Ellenberg, Dash, & Rigler, 1980).

Psychological and Behavioral Relevances: social adaptation, self-esteem and trait anxiety

As discussed earlier, the longer life expectancy for children made possible by medical advents has changed the psychosocial problems faced by the children and their families. Hence, it is more important and meaningful to look at the effects of the disease upon their day-to-day functioning, and their adaptation to it, as opposed to emphasizing inferred psychologic deviance (Kellerman, Zeltzer, Ellenberg, Dash, & Rigler, 1980).

Among the multiple adjustments a child need to face when living with leukaemia, the study could only focus on a few important factors relating to children's adjustment. Henceforth, the following paragraphs will be devoted to discuss respectively the variables of anxiety, self-esteem, and social adaptation of the leukaemic children and the rationale for their selection, which are the present study's concern.

Social adaptation

The concept of adaptation and adjustment signify an ability to deal effectively with the varied demands of everyday living (Buss, 1990). Specific ways of behaving are commonly accepted as appropriate or necessary for the individual in certain areas of functioning. Lazarus and Launier (1978) probably best defined coping as it relates to chronic illness as the efforts, both action-oriented and intra-psychic, used to manage (i.e. master, tolerate, reduce, and minimize) environmental and internal demands, along with the conflicts among these efforts, which tax or exceed the person's resources.

In this regard, it helps to have an initial understanding of the effects of chronic illness in general and leukaemia in particular on a child.

Regardless of the age of a child, a chronic illness represents a powerful source of stress to the afflicted child. The child must cope with frequent invasive medical procedures, the unpredictable exacerbation of symptoms, physical discomfort and bodily disfigurement, the side effects of medication, the interruption of normal daily routine subsequent to repeated hospitalisation, and the likelihood of an early death.

Concerning the children suffering from leukaemia, they would need to be hospitalised for two to three months for intensive treatment during induction phase when the illness is initially discovered. They may recover after a two to three years of maintenance treatment to maintain them at remission. During this period of time, the afflicted child needs to regularly attend medical follow up and closely follow medical advice on medication.

Studies showed that the well-adjusted child patients find satisfaction in a variety of compensatory motor activities and intellectual pursuits while slowly accepting their physical limitations. On the other hand, patients with prolonged poor adjustment to their chronic disorder tend to show some of the behavioral patterns such as fearfulness, inactivity, lack of outside interests, and a marked dependency on their families. They may also become overly independent, engaged in prohibited risk-taking activities, or they may be shy and lonely and harboured resentful and hostile attitudes toward other people (Mattsson and Gross, 1966; Mass, 1977).

Exactly what adaptation these leukaemic children have to face? Absence from school is likely to occur during attacks of chickenpox or measles, as these can be associated with serious complications for such children. On the other hand, apart from a

the initial period of two to three months of hospitalization for diagnosis and induction treatment, long hospital stays are not usual. Apart from this the child in complete remission should be in good general health and can attend school and participate in all activities, although side effects of the drug treatment may sometimes limit him. The illness also does not leave any lasting apparent physical disabilities on them.

Spinetta (1982) described a series of coping tasks in evaluating the adaptational efforts of children with cancer. These coping tasks included tolerating or relieving distress associated with the illness, maintaining a sense of personal worth; maintaining positive personal relationships with parents, peers and care-givers, and meeting the specific requirements of particularly stressful situations, utilising the resources available.

Research studies specifically on the adjustment of the leukaemic patients have been scarce. However, studies with the physically handicapped may help to shed light on the former.

Though some studies on long-term childhood disorders reported a surprisingly adequate psychosocial adaptation of children followed to young adulthood (Moos, 1977), children with a chronic disease have generally been found to show varying degrees of emotional and social maladjustment (Bernstein, 1971;

Miller, 1972; Dorner, 1976). They are at a greater risk of secondary psychosocial maladjustment (Cadman, Boyle, Szatmari & Offord, 1987; Pless and Roghmann, 1971; Rutter, Tizard, & Whitmore, 1970).

There is some indication that the above, to a certain extent, also applied to children with leukaemia (Eiser, 1977). For example, a higher incidence of school phobia than among normal children has been reported for leukaemic children (Kennedy, 1965; Lansky, Lowman, Tribhawan Vats, & Gyulay, 1975). They are also found to have poorer interpersonal relationship (Spinetta et al., 1974).

Since coping is an ongoing rather than a static process, study on the leukaemic children's adaptation to their illness would be meaningful only in the developmental context. It is more important to look at the effects of the disease upon day-to-day functioning. As Spirito highlighted, "Most research now looks at broad things like anxiety and depression. We need to look more at developmental issues... [poor] socialization skills lead to future emotional difficulties." (JAMA, 1988)

Despite a number of isolated reports of psychological problems in leukaemic children whose accounts generally involve the identification of fear, isolation, anxiety, and losses of self-esteem (often secondary to treatment induced hair loss and other bodily changes), no definitive conclusion regarding these behavioral disturbances can yet be made.

Self-esteem

Maintaining a sense of personal worth is probably the most important key to happiness and success (Olds & Papalia, 1986). Human beings have the basic need to enhance the self-concept to organise the data of experience and facilitate attempts to fulfil needs, avoid disapproval and anxiety (Rogers, 1951; Epstein, 1973).

While there are general agreement on the importance of self-concept to a person's well being, there are a variety of positions on the nature of self-concept. From a behaviouristic viewpoint, the self-concept has an aura of mysticism about it. No one has succeeded as yet in adequately defining it as a hypothetical construct. On the other hand, the self-theorists consider the self-concept to be the foremost central concept in psychology as it provides the only perspective from which an individual's behaviour can be understood. Despite the arguments about self-concept, most agreed one of the natures of it is that there is a basic need for self-esteem which relates to all aspects of the self-system.

Having discussed the significance of self-esteem, it is essential to have some understanding of its relationship with chronic illness in general and leukaemia in particular.

"Chronic disease has been seen as affecting a person's self-esteem, sense of identity, autonomy, and future goal-orientation." (Kellerman, Zeltzer, Ellenberg, Dash & Rigler, 1980). According to Cohen and Lazarus (1979), a serious disease is a threat to the patient's self-image, the way in which one consciously perceives oneself.

Concerning the children with cancer, Spinetta (1982) suggested that maintaining a sense of personal worth is one of the adaptational efforts. Other researchers also suggested that restoring one's self-esteem was one of the coping tasks that was facing the chronically ill in general, and leukaemic child in particular, in the adjustment process (Taylor, 1983; Moos and Tsu, 1977). It was because his illness interfered with his development of self-concept which required him extra coping abilities to adapt to the disease.

There are indications from previous literature suggesting the possibility of abnormal emotional development among children with chronic illness. For instance, the chronic bronchitis patients are more psychiatrically disturbed and more neurotic in personality than were their match controls (Rutter, 1977).

On the other hand, other investigations also challenged the common contention that chronically ill children are a psychologically deviant population. Tavormina, Kastner, Slater and Watt (1976) found that the overall pattern of psychological development of chronically ill children (diabetes, asthmatic, & cystic fibrotic) demonstrated the normality rather than the deviance. One study with the adolescent subjects found that the chronically ill did not differ from the healthy groups in anxiety or self-esteem. In short, these studies cast doubt upon the supposition that chronic or serious disease inevitably leads to psychopathology.

In the face of this controversy of whether the chronically ill children are adversely affected, some researchers suggested that part of the abnormalities in emotional adjustment observed may be attributed to specifics of illness. For example, special diets and frequent physiotherapy at home as in the case of cystic. It is suggested that the contradictory research results may be attributed to the researchers' attempts to characterize as a homogeneous group, children who were heterogeneous in terms of their life experiences (Tavormina and Boll, 1977).

Before answering whether the leukaemic children are adversely affected in their self-esteem and social adaptation, it is perhaps useful to put aside the controversial issue for a

while and have a look at the way one builds up one's self-esteem. Coopersmith (1967) claimed that people develop their self-concepts according to four bases : significance (the way they feel they are loved and approved of by people important to them); virtue (attainment of moral and ethical standards); and power (the extent to which they influence their own and other's lives).

In this connection, the length and intensity of treatment involved would lead people to predict a degree of emotional maladjustment among children with leukaemia. On the other hand, children with leukaemia are required only to take drugs on a regular basis once they are in the remission phase of their illness. The relative lack of intrusion into other aspects of their daily life may have minimised many of the disturbing aspects due to their diseases.

The other possibility is that although 'handicaps' due to the illness is not readily visible, this does not mean these children did not need to adjust to the illness. For instance, pain may be a significant source of distress throughout the course of treatment. Disfigurement such as hair loss, though temporarily during the induction phase of treatment, may threaten pride or cause extreme embarrassment (Hinton, 1973).

Relation between self-esteem and social adaptation

Self-esteem was reported to be positively correlated with social skills in the social competence research studies (Buhrmester, 1990; Riggio, Trockmorton, & DePaola, 1990; Spirito, Stark, Cobiella, Drigan, 1990).

On the other hand, studies had reported strong correlations between negative self-concept and the various forms of psychopathology. For instance, negative self-concept was identified as one of the significant psychosocial correlates of substance abuse, serious psychological distress, and negative attitude toward illness (Bay, 1973; Coopersmith, 1981; Hobfoll and Walfisch, 1984; Walsh and Walsh, 1987). Besides, children with negative self-concepts were tended to be more destructive (Coopersmith, 1981).

In line with the above, some researchers found that programs designed to enhance the self-esteem of disadvantaged children resulted in significant improvements in behaviour and psychosocial functioning (Hathaway and Rhodes, 1979; Jones, Gray, & Jospotre, 1982; Williams, 1978). Similar study has been carried out with the physical ill adolescent outpatients. Improvement in peer and family relations was resulted after they were helped in enhancing their self-esteem (Miller, 1990). In other words, increase in a person's self-esteem resulted in improvement in behaviour and social functioning.

As earlier discussed, up till now, there is no conclusive remark on the psychological normality and abnormality among chronically ill children. If increase in a person's self-esteem results in improvement in behaviour and social functioning as suggested by some researchers (Hathaway and Rhodes, 1979; Jones, Gray, & Jospotre, 1982; Williams, 1978) and as the leukaemic patients are going to survive the disease longer nowadays, this may be an important area of concern that is pertinent to their coping. However, very few study in this area has been done with the leukaemic children and there remains an urgent need to document their responses (Eiser, 1979).

Anxiety

In the face of the complexity of anxiety phenomena, the ambiguity and vagueness in theoretical conceptions of anxiety, Cattell was the one to introduce the concepts of state and trait anxiety (Cattell, 1966; Cattell and Scheier, 1961, 1963). It was then elaborated by Spielberger (1966, 1972, 1976). These authors stress the importance of differentiating between anxiety as a state - a transitory emotional state brought about by situational stress - and as a trait - a stable component of personality resistant to situational fluctuation. In general, anxiety states are characterized by subjective feelings of tension, apprehension, nervousness, and worry, and by activation or arousal of the autonomic nervous system. In contrast to the transitory nature of anxiety state, anxiety trait can be conceptualized as relatively enduring differences among people in

specifiable tendency to perceive stressful situations as dangerous or threatening. In other words, trait anxiety refers to relatively stable individual differences in anxiety proneness as a personality trait. A person who is high in trait anxiety tends to respond more anxiously across situations than a person lower in trait anxiety.

What is unique to childhood cancer, or cancer in general, is its uncertainty. Though the probability of survival increased in the past years, outcome is seldom certain at the time of diagnosis and for most patients, relapses are always within the realm of possibility. Even when the child achieves a five-year or longer survival, uncertainty remains (Koocher and O' Malley, 1980). For some patients, those feelings of anxiety and fear associated with hospitalization and unpredictable course of the disease remain an emotional centre of tension.

Having a brief understanding of anxiety in the leukaemic children, it is essential to discuss the significance of anxiety and some of its effects in relation to self-esteem and adaptation respectively.

Heightened anxiety has been traditionally viewed as an essential component of the neurotic process (Kellerman, Zeltzer, Ellenberg, Dash, & Rigler, 1980). This notion has received empirical support from the work of Spielberger, Gorusch, and Lushenie (1970) who found elevated levels of anxiety in patients with psychiatric disorders when compared with normal controls.

Anxiety is found to be inversely related to self-esteem or self-concept. For instance, psychiatric patients suffering from severe anxiety have a less favourable self-concept and view themselves as worse than others in general (Guidano, Liotti & Pancheri, 1971; Marks, 1965). Highly anxious children have less positive self-concepts (Horowitz, 1962; Lipsett, 1958). They tend to take a poor view of themselves, hold themselves in low esteem, and rate themselves in an inferior position within a group. Besides, not only do such children express less positive feelings toward themselves, but they also express more negative feelings than less anxious children (Bernard, Zimbardo, & Sarason, 1961).

With regard to the chronically ill children, studies also found that their self-concepts are related to the level of stress they experienced (Lewis and Khaw, 1982). Bedell, Giordani, Amour, Tavormina, and Boll (1977) found that self-concepts of chronically ill children were related to the level of stress on the leukaemic children.

Anxiety is also found to be related to social functioning. For instance, highly anxious boys in classroom observations show a higher degree of distractibility than non-anxious boys (Sarason et al., 1958, 1960). They may have low academic test performance in spite of high intellectual potential. High-anxious children are also less popular with their peers than low-anxious children

(McCandless, Castaneda, and Palermo, 1956) because they have very little free energy and thus are incapable of giving themselves in a relationship.

Taking into account that high level of anxiety has inverse relationship with self-esteem and social functioning, and that a person who is high in trait anxiety level tends to respond more anxiously in various situations than person lower in trait anxiety, the variable of anxiety is to be controlled in the present study.

Research studies on Chinese leukaemic children

Studies on the leukaemic children are scarce. Even fewer studies had been reported on the Chinese child patients suffering from leukaemia.

The study by Lam and Yuen (1987) was one of the limited number of studies on Chinese child leukaemic patients. It was carried out on 70 Chinese children with acute lymphoblastic leukaemia with the aim of studying the clinical presentation of their illness. The study results found that fever (64%) and pallor (56%) were the two most common presenting symptoms followed by bone pain (42%) and lassitude (42%). Obviously, the focus of the study was on the medical aspect of these leukaemic children.

Regarding the psychological adjustment of the Chinese child patients with leukaemia, the study by Lee, Lieh-Mak, Hung, & Luk in 1984 was the only study available to my knowledge. Their study aimed at investigating the death anxiety in the leukaemic Chinese children. A group of Chinese leukaemic children aged six to ten were compared to a control group of Chinese orthopaedic patients, using the Children Apperception Test (Human) as a measure of the subjects' pattern of psychological functioning and degree of psychopathology. The results showed that leukaemic children exhibited a distinctly different pattern of psychopathology and psychological defense. Isolation, detachment and denial were commonly used to defend against their insecurity, abstract fears and uncertainties. Themes relating to parental misunderstandings and maltreatment were also elicited.

Differed from the studies mentioned above, this study looks at the leukaemic children's social adaptation as well as their psychological adjustment. As spelled out in the earlier part of the literature review section that leukaemic children is expected to have longer and longer life expectancy, a theme of death anxiety, though still relevant, might be inadequate in helping these children cope with normal daily life. Hence, it is hoped the present study would be an meaningful exploration into this area.

Arriving at the Research Problem

Bailey et al. (1975) stated that suffering from a serious disease means that the person's self-image needs to be adjusted, for the mutilation, the reactions of other people and the illness as such, which imply a threat to the way in which one considers oneself. Not only will it change a person's outlook on life but it also has effects on the daily activities.

If prior theoretical formulations regarding chronic illness and psychological maladjustment are correct, one would expect that the children with leukaemia in the present study would show significantly lower self-esteem and poorer social adaptation than their healthy peers. Besides, the leukaemic children with lower self-esteem would have poorer social adaptation.

CHAPTER II

METHOD

Based on the above literature review, it is suggested that, due to the advent of medical outlook, the leukaemic children is now facing changing psychosocial problems which require relatively long term adjustment as compared with twenty years ago. As few studies in this area can be found, this study aims at finding out the relation between the psychological and social adjustment of the children suffering from leukaemia. Three scales is used to measure the subjects' level of anxiety, self-esteem and social adaptation respectively (details to be elaborated in the instrument section).

Many of the research studies and literature showed that a high anxiety level had adverse impact on a person's self-concept and social adaptation (refer to chapter III on research studies on leukaemic patients). With the chronically ill people, they typically experience many extensive medical treatment and their lives are at times threatened by disease. Their day-to-day social functioning and poor self-concept may be due to their life histories. As it is felt that anxiety may have confounding effect on the subjects participating in the study and should be controlled. Hence, all subjects are asked to complete the STAIC A-Trait questionnaire measuring their level of trait anxiety in order to make the two subject groups comparable in this regard.

Having controlled the anxiety factor, their self-esteem and social adaptation level would then be analyzed. As mentioned earlier, coping is an ongoing rather than a static process. To better understand the leukaemic children's social adjustment, the Adaptive Behaviour Inventory of Children (ABIC), a scale measuring a child's performance in a developmental context was used. It yields information on the children's day-to-day activities provided by their parents. A parent report measure is chosen since this method have been among the most widely used behavioral assessment methods. The respondent is asked to rate the child on recent observations of the child's behaviour. These checklist and rating scales can provide data that would be difficult to obtain from other sources or people less familiar with the child and his behaviour (Goldman et al., 1983). In so doing, we can know, as a whole, these children's ongoing coping by capturing their static responses.

Therefore, the present study hypothesizes the following :

1. both the leukaemic children group and the non-ill comparison group would have similar level of trait anxiety at the time they participate in the study;
2. the leukaemic children group would have lower self-esteem than the comparison group;
3. the leukaemic children group would have lower social adjustment level than the non-ill comparison group.
4. within the leukaemic children group, those who have lower self-esteem would have poorer social adaptation.

The figure below helps to illustrate the variables and the focus of the present study.

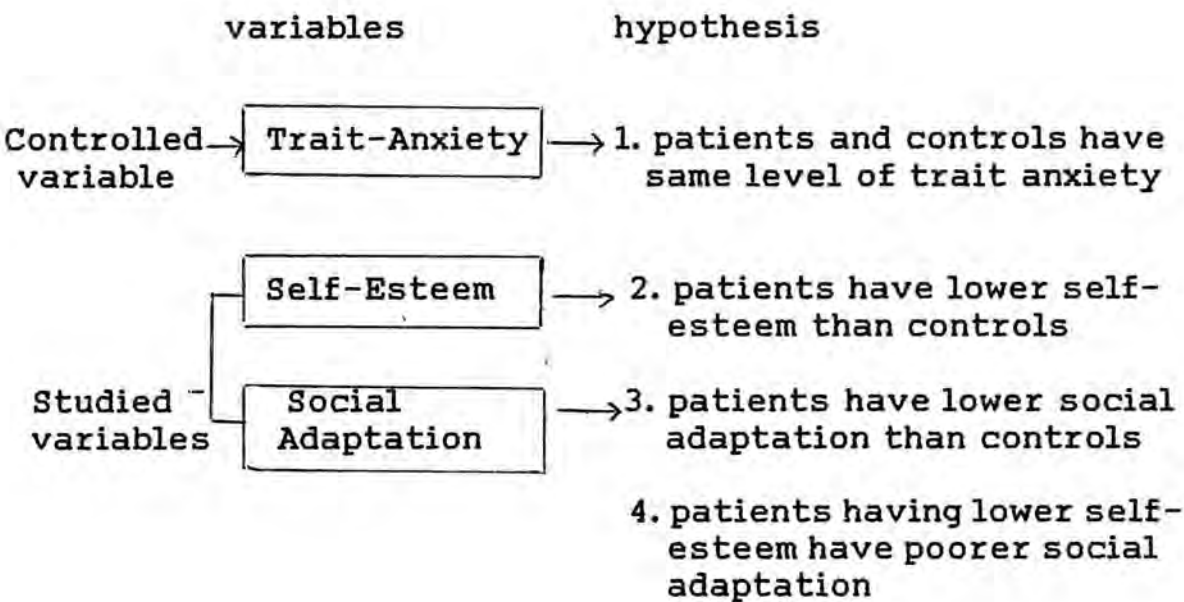


Figure 1. Illustration of variables and focus of the study.

Sampling and selection criteria

Purposive non-probability sampling method was used in recruiting the subjects in the patient group. In addition, because of the limited number of appropriate clinical subjects, all the leukaemic child patients attending the Outpatient Department of the Paediatric Department of the Prince of Wales Hospital were regarded as potential subjects when they fulfil the project's selection criteria. They were qualified for the study, provided at least 3 months has passed since the diagnosis was made, the patient was in complete remission and was on treatment, and the disease had not relapsed by the time they participated in the study. Besides, their ages had to fall between 7 to 11 in order to

fit the age criteria of the measurement scales used. Finally, they were included if the patients and their parents consented to participate.

Subjects in the control group came from a primary school located in a new town in the New Territories whose students mainly came from the housing estates (both public and private) in the neighbourhood. This school was chosen because it is felt that their socio-economic background would be, in general, comparable to the patient subjects attending the Out-patient Clinic of the Prince of Wales Hospital which serves the same region in which the school locates. This sampling method was not the best way to find control subjects, but because of time constraint and practical difficulties, in finding non-clinical subjects with parental consent, this method was selected.

Subjects

Initially, 28 patient subjects were approached. One potential subject who fit the selection criteria was considered to be too vulnerable by the doctor and was not asked to participate in the study. One subject who initially agreed to participate refused to join later. Three subjects were excluded, one because the mother was too emotional to complete the interview, and the other two because they did not fit the age criteria of the design. A total of twenty-three children who were suffering from leukaemia were eventually included in the patient group.

Fifteen of patient subjects are boys and eight are girls. This sex ratio is not too different from the study by Lam and Yuen (1987) who reported a male to female ratio of 2.7 to 1. In actuality, more boys are afflicted with this disease than girls. They are all in the remission phase of their illness. Their age ranged from 7 1/2 to 11 years old.

A total of 105 normal non-ill children aged from 8 to 11 from a primary school were approached to be the comparison group. Six were excluded because their parents did not return their questionnaires. They were assumed to be non-ill because their teachers did not report their having any special illness and subsequent absence from school. Besides, their parents also did not inform the school of their children having illness. In the end, 99 children, 46 boys and 53 girls were included in the comparison group. [Insert Table 1]

Instruments

1. State-Trait Anxiety inventory for Children (STAIC)

This inventory is used to measure the trait anxiety level of all children subjects at the time of their participation so as to control the possible extraneous effect of it on the study because anxiety is often found to have adverse effects on the person's performance or self-esteem (Spielberger et al., 1973).

The inventory was developed by Spielberger et al. (1973) as a research tool for the study of anxiety in elementary school children. It can be administered in either individual or group form. It is comprised of separate, self-report scales for two distinct anxiety concepts : state anxiety (A-State) and trait anxiety (A-Trait).

The A-State scale is designed to measure transitory anxiety states, that is, subjective, consciously perceived feelings of apprehension, tension and worry that vary in intensity and fluctuate over time, for instance, stressful experimental procedures. It consists of 20 item statements that ask children how they feel at a particular moment in time. The A-Trait scale is a research tool selecting children who vary in anxiety proneness and for detecting neurotic behavioral tendencies for children. It consists of 20 item statements and the subjects respond to these items by indicating how they generally feel.

The inventory was standardised on a sample of 1951 fourth to sixth grade elementary school students (697 males and 816 females) in the United State. Norms for the STAIC Scale had been extended to third grade children (Papay & Hedl. 1978). A test-retest reliabilities over a six-week interval for A-Trait was reported to be 0.65 for male and 0.71 for female students.

The inventory is mainly used with children from nine to twelve years old. It can also be used with slightly younger or

older children (Spielberger et al., 1973). In the present study, a few subjects in the patient group are 7 1/2 years old. However, due to the limited number of appropriate patient subjects, they are still included as allowed in the inventory.

The Chinese version of the Anxiety-Trait Scale is used as all the subjects of this study are Chinese. Information about the reliabilities of the Chinese version of the scale, however, is not available.

To make the study more comprehensive, it would be better to use both the STAIC A-trait and A-state inventory. However, taking into account the many practical constraints such as the time allowed by the school principal to carry out the study in the school setting and the attention span of the children limits the length of the questionnaire, therefore only the STAIC A-Trait scale is used. The higher the score one obtained, the higher level of anxiety is indicated.

2. Adaptive Behavior Inventory for Children (ABIC)

The Adaptive Behavior Inventory for Children (ABIC) is used to study the social adjustments of all children subjects. The inventory was developed by Mercer J.R. and Lewis J.F. in 1977. It is a parent report measure. It is used in the present study because it can provide data that would be difficult to obtain from other sources or people less familiar with the child and his behaviour (Goldman, Stein & Guerry, 1983)

The series of questions about the child's activities at home and in the neighbourhood yields information about the child's adaptation to the social systems in which he or she participates. It is one of the most widely used measures of adaptive behaviour currently available to psychologists and education specialists.

The ABIC was standardised on a stratified probability sample of 2,085 students selected from the public school population of California. White, Black and Hispanic students were included. The age of the students ranged from 5 to 11 years old.

The Inventory consists six subscales : family, peer-relations, community, non-academic school, earner-consumer, self-maintenance. It measures the child's social role performance in these several areas. The higher score a person obtained in the scales, the more adaptive behaviours one showed.

The items for the ABIC were derived from in-depth interviews with parents. From the qualitative information, a pool of items was developed and pretested on 1,259 parents. Reliabilities for the ABIC Average Scaled Scores are all above 0.95 using split-half procedures, and for individual scales reliabilities range from 0.71 upwards, most above 0.80.

Information about the reliability of the Chinese form of the scale is not obtainable. However, it is reported that there existed no differences in reliabilities across ethnic groups.

3. Coopersmith Self-esteem Inventory (SEI)

The Self-Esteem Inventory developed by Coopersmith (1967) is a 58 items self-administered inventory designed as a general assessment of self-esteem. The items are short statements answered "Like Me" or "Unlike me". Test-retest reliability of the original form of the SEI was reported as 0.88 over five weeks and 0.70 over three years. A 0.90 split-half reliability were reported respectively by Taylor and Reitz (1968) and Fullerton (1972). Coopersmith reported discriminate validity correlations of 0.72 and 0.45 with the Edwards Personal Preference Schedule and the Marlowe-Crowne Social Desirability Scale.

The short form Chinese version of the Self-Esteem Inventory (Yang & Bond, 1980) was used. The Chinese version consists of 25 items and were tested in two pilot studies with 65 eleventh and twelfth grade students and 160 tenth and eleventh grade students. Reliabilities of the scale was found to be 0.72 (Cronbach's alpha) (Cheung & Lau, 1985). The scale provided a global score of self-esteem. The scoring direction of the inventory is that the subject should score higher with a higher level of self-esteem.

To sum up more clearly, the instruments used in the present study were summarised in the figure below :

Patient Group	Comparison Group
1. Anxiety-Trait scale (STAIC) - measure trait anxiety level - completed by child subjects	
2. Self-Esteem Inventory - measure self-esteem level - completed by child subjects	
3. Adaptive Behavior Inventory of Children - measure social adaptation of subjects - completed by parents; the 6 subscales are : a) Family b) Peer-relations c) Community d) Non-academic school performance e) Earner-consumer f) Self-maintenance	

Figure 2. The names of the measurement scales used.

The Administration

Verbal consent of the parents of the prospective patient subjects to voluntarily participate in the study was obtained during the time when they attended the follow-up session in the Outpatient Department of Paediatric of the Prince of Wales Hospital. Subsequently, interview was arranged in the interview room at the Psychiatric Outpatient Department.

Concerning the comparison group, consent was obtained from the school principal and the inventories were administered in group form in the classroom. Parents of the subjects in the control group completed the questionnaires which were collected three days later.

CHAPTER III

RESULTS

Reliability of instrument

Good reliability of the instrument is important to make sure that it measures what the researcher really wants to measure. Hence, Alpha reliability tests is performed with the two measurement scales used. The scores of the Self-esteem Inventory and the Anxiety-Trait Scale are 0.613 and 0.873 respectively. Reliability test of the Adaptive Behaviour Inventory of Children is not done because the inventory is age-graded and can only be tested over time.

Demographic data of child and parent subjects

A total of 122 children are included in the present study, of whom 23 are leukaemic children in the patient group and 99 are healthy non-ill children in the comparison. Half of children subjects are boys and half of them are girls. Of the 23 patient subjects, 15 are boys and eight are girls. In the comparison group, 53 are girls and 46 are boys. Table 1 summarised the total number and sex of the child subjects. [see Table 1]

The age of all the subjects ranged from 7.6 to 11.7 years old. The patient group had a wider age range of 7.6 to 11.7 years comparing to the 8.3 to 10.6 years of age range of the comparison group. [see Table 2]

Table 1: Total number and sex of the child subjects.

	Sex		
	F	M	
Patient	8	15	N = 23
Comparison	53	46	99
	N = 61	61	

Table 2: Age of the child subjects.

Age	Patient N=23	Comparison N=99
7.6 - 8.5	11	15
8.6 - 9.5	2	38
9.6 - 10.5	7	36
10.6 -11.5	2	10
11.5 or over	1	0

Regarding the children' education level, all the children in the comparison group were either primary three or primary four children. On the other hand, the education level of the subjects in the patient group ranged wider from primary one to primary five. [see Table 3 and 4]

Concerning the adult subjects, that is, the children's care giver, the majority of the adult respondents in this study had received primary or secondary education. Overall speaking, greater number of fathers received higher level of education than the mothers. [see Table 5]

There were two cases in the patient group whose education level of the child's parents was not available as the child's chief caretaker was the paternal and maternal grandmother who could not give accurate information on this account.

Checking assumptions of statistics used on Self Esteem (SEI) and Adaptive Behavior Inventory of Children (ABIC)

Before analyzing the subjects' scores on social adaptation, a test is done to examine whether the subscales of the Adaptive Behavior Inventory of Children are related with each other since their relation would affect the type of analysis used. The result of the Bartlett test of sphericity shows that the two variables are not independent of each other ($\log = -.7428$, Bartlett test of sphericity = 11.4673, $p < .05$). This justified the use of MANOVA which would be of no reason to use if the variables are not correlated.

Table 3: Education of the child subjects

Education		Age Range
Patient	P.1 - P.5	7.6 - 11.7
Comparison	P.3 - P.4	8.3 - 10.6

Table 4: Mean age of education of the two groups.

Education	Patient	Comparison
P.1	7.7	
P.2	8.3	
P.3	9.7	8.3
P.4	10.5	9.2
P.5	11.5	

Table 5: Education level of adult subjects (child's care-giver)

Education	Father		Mother	
	Pt.	Compar.	Pt.	Compar.
none	---	---	1	4
primary	1	41	5	55
secondary	20	49	16	37
tertiary	1	9	---	3
unknown	1	---	1	---

Before doing the MANOVA, a multivariate test for the homogeneity of variance is done. The result showed that the data did not violate the homogeneity of variance assumption for the MANOVA to be used (Boxes M = 11.248, $p < .05$).

MANOVA is done to investigate whether the two groups differ significantly in their level of social adaptation. It is followed by the univariate F-test to locate the source of difference. Pearson correlation between sex, age, Self-Esteem Inventory score and subscale scores of the Adaptive Behavior Inventory of Children are also done in order to understand if there are any correlation between these variables.

Trait Anxiety

To control the confounding effect of trait anxiety on the subjects' self-esteem and social adaptation, a simple t-test is performed with their scores on the A-Trait scale. Mean scores of A-Trait for the leukaemic patient group and the non-ill comparison group were 35.708 and 36.660 respectively. Result shows no significant difference in their A-Trait scores ($p > .05$). In other words, the child patient group and the comparison group have the same anxiety level at the time they participated in the present study.

The mean scores and standard deviations of the two groups on the A-Trait Scale were presented in Table 6. [see Table 6]

Table 6: Means and standard deviation of Trait-Anxiety Scale

	Mean	Trait-Anxiety 95% conf. interval	S.D.
Patient	35.708	32.83 - 38.59	6.82
Comparison	36.66	35.14 - 38.17	7.60

Self-Esteem

ANOVA result showed no significant difference between the patient group and the comparison group on SEI scores ($F=.3691$, $p>.05$). The former group did not score significantly different from the former. Hence, the prediction that the leukaemic children have lower level of self-esteem than their on-ill contemporary was not supported. The means and standard deviations of the two groups on SEI scores were summarized in Table 7. [see Table 7]

To further investigate whether there is any age effect within the patient group and the non-ill comparison group, Pearson correlation was performed. The result showed no significant effect of age in both group of children at $p>.05$ significance level.

Besides, no significant sex difference on the Self-Esteem Inventory score, either in the leukaemic patient group or non-ill comparison group was found in the Pearson Correlation Test at $p>.05$ significance level.

Social adaptation between patient and non-ill comparison Group

The means and standard deviation of ABIC are summarized in Table 8. Result shows that the leukaemic children generally scored lower than the non-ill comparison group in the measurement of global score of social adaptation.

Table 7: Means and standard deviation of Self-Esteem Inventory

	Mean	SEI 95% conf. interval	S.D.
Patient	33.39	32.27 - 34.51	2.90
Comparison	33.90	33.16 - 34.62	3.67

Table 8: Means and standard deviation of the two groups on Adaptive Behavior Inventory for Children (ABIC)

ABIC	Mean		S.D.	
	Pt.	Compar.	Pt.	Compar.
Family	47.130	52.515	9.464	7.404
Community	37.130	40.071	6.982	5.775
Peer-relation	44.478	47.990	9.234	7.436
Non-academic	48.565	48.980	8.262	7.404
school	46.826	47.747	8.747	6.120
Earners-consumer	45.391	48.404	6.959	6.882
Self-maintenance				
ABIC global score	44.965	48.040	6.895	5.231

MANOVA was performed and the results showed that there is significant difference between the non-ill control and the patient group in the global score of social adaptation ($F=2.061$, $p<.05$).

The univariate F-tests were examined to look for the sources of difference. It was found that the leukaemic patients group and the non-ill comparison group differed mainly in the area of Family, Community and Peer-relation subscales. No significant difference was found in the other three subscales of Non-academic school performance, Self-maintenance, and Earner-consumer. Results were summarized in Table 9. [see Table 9]

No significant sex and age difference was found in all the ABIC subscales in both the patient and non-ill comparison group at $p>.05$ significance level.

Self-esteem and social adaptation within the leukaemic children

To examine whether there is difference in the social adaptation level between the leukaemic children with lower and higher self-esteem, a MANOVA was performed followed by a T-Test. The leukaemic children were divided into two groups, using the mid-point of the range of their scores on the Self-Esteem inventory as the cut off point. Finally, among the twenty-three leukaemic children subjects, thirteen fell into the higher self-esteem group and ten fell into the lower self-esteem group.

Table 9: Univariate F-tests of the two groups on subscales of Adaptive Behavior Inventory of Children.

	F	P
Family	7.174	< .05
Community	4.146	< .05
Peer-relations	4.005	< .05
Non-academic school	.056	---
Earnerconsumer	2.873	---
Selfmaintenance	2.656	---

Significant difference in their social adaptation was found between the lower and higher self-esteem patients ($F=3.425$, $p<.05$). T-test results showed that the two groups only differed significantly in the Peer-relation and the Earner-consumer subscales. Table 10 summarised the T-Test result between the leukaemic children with higher and lower self-esteem. [see Table 10]

Table 10: T-Test results on social adaptation between leukaemic children with higher and lower self-esteem

	SEI				P
	high	low	high	low	
	Mean		S.D.		
Family	51.154	43.636	8.620	9.626	-----
Community	39.615	34.636	5.124	7.953	-----
Peer-relation	49.154	39.181	7.244	8.122	< .05
Non-academic school	49.846	47.546	7.819	8.745	-----
Earner-consumer	50.923	42.727	6.813	8.889	< .05
Self-maintenance	47.923	43.923	6.211	7.659	-----
Global adaptation	48.153	41.909	5.669	6.891	< .06

CHAPTER V

DISCUSSION

The first part of this chapter will be devoted to discussing the results. A conclusion of the results would be drawn and its subsequent impact on direction of future studies were discussed. It is then concluded by certain weaknesses of this study which placed certain limitations in the interpretation of the results. ways of improving future study is also highlighted.

Anxiety

Though trait anxiety is only treated as a controlled variable in the present study, it is still worthwhile to discuss this finding.

In a study investigating the psychological illness on a person's anxiety and self-esteem, Kellerman, Zeltzer, Ellenberg, Dash, and Rigler (1980) found that the healthy adolescents were markedly similar to the ill adolescents on measure of trait anxiety. The authors suggested that ill adolescents may report high levels of situational (state) anxiety while undergoing physical discomfort, it does not appear to translate into a generalized, long-term level of heightened anxiety. In other words, ill adolescents do not become chronically anxious and do not necessarily react with inordinate distress to the problems of daily living.

The result of the present study also showed that the leukaemic children did not differ from normal non-ill children in measure of trait anxiety. In this connection, Bedell et al. (1977) who also found marked similarity in trait anxiety between healthy children and patients with chronic disease, offered a plausible answer. They suggested that for the healthy child, stress is seen as a disruption, and changes are anxiety producing. However, the chronically ill youngster has learned to live with varying degrees of constant or frequent life disruption, and thus develops heightened stress tolerance.

Self-esteem

Common sense favours the belief that chronically ill children generally would be emotionally disturbed by their illness. Besides, chronically ill children have been found to exhibit emotional problem in some studies (Rutter, 1977).

The present result shows that, as a group, the children suffering from leukaemia did not exhibit lower level of self-esteem. This result is similar to the study by Kellerman et al. (1980) who found marked similarity between healthy and ill adolescents on measure of self-esteem.

This challenges the common untestified contention of psychological abnormality in the leukaemic children. Perhaps, as Geer and Burgess (1987) and Kellerman et al. (1980) suggested, physical illness alone did not necessarily lead to greater

dissatisfaction with themselves or poorer psychological well being. In other words, the presence of a chronic illness is not sufficient to produce psychopathology but does place a child in at "at risk" state which may in turn increase his vulnerability to the stresses of life (Green, 1965). In this connection, the psychological status of the leukaemic children might be results of interaction of medical and social environment as proposed by Bedell et al.(1977). Probably, among all other factors, the patient's psychological adjustment may be more related to his or her parent's style of handling and their parent-child relationship, the effect greater for younger children (Carey, 1974; Lewis and Khaw, 1982; Tropauer et al., 1982).

School

There are some research findings showing that leukaemic children continue to perform academically as they had prior to their illness indicating minimal detrimental effects from the school absenteeism (Ablia, Binger, Kushner, Zoger, & Mikkelsen, 1971; Futterman and Hoffman, 1970; McCarthy, 1975).

The social adaptation scale used in the present study did not include a scale specifically for measurement of performance in school. However, a close examination of the leukaemic children's education were generally one or two forms behind the non-ill control. Taking this factor into account, they were actually lagging behind other children in academic area.

The reason for this is somewhat easily understandable. Leukaemic children have been found to miss a great deal of school (McCarthy, 1975). The reasons for missed school generally include pain and distress from the illness, the need for clinic appointments, epidemics in the school, and other health-related factors. Hence, very often, these children were one or two forms behind, depending on their illness progress.

Community activity

Among all the six subscales of ABIC (Adaptive Behavior Inventory of Children), the community activity subscale was scored lowest both in the patient and non-ill control children. It is guessed that the society's trend in emphasising academic achievement even in early years might have indirectly discouraged parents from letting their children participate in community activities. The concern of personal safety and danger of mixing up with undesirable peers without parent supervision might be another affecting factor as well.

Nonetheless, the level of community activity participation was even lower among the leukaemic children. Their poorer performance in this area may be due to the patients and their parents' realization of their lower body defence ability. Since contraction of infection can sometimes be serious and may even

be fatal, it is likely that they avoid public occasions or events where there are a large number of people and in which they have greater chance of contracting infectious disease. Reducing participation in community activities is one of the ways to minimize the probability of getting infected.

Peer-relations

In a study with cancer children (JAMA, 1988), the children who had been treated for cancer were 2 1/2 times more likely to spend time alone and were less likely to share, to reciprocate compliments, and to laugh along with jokes when they were compared with the control group. Parents acknowledged that their children had had fewer opportunities for peer interaction, but otherwise were unaware of the social skill deficits reported by their children. It is suspected that this may also be related to the occasional disruption of social routine due to their lower immunological ability.

In the present study, the children suffering from leukaemia also scored significantly lower in the Peer-relations subscale. That is, relation with peers is one of the areas that the leukaemic children did poorer than the normal non-ill control subjects. This might have indicated deficit in this regard.

To understand this issue, it should be recalled that the leukaemic children often miss school due to health-related problems. They have to spend more time with adults during treatment than did healthy peers (Spirito, Stark, Cobiella, & Drigan, 1990) The frequent absence from school deprived them of the chance to mix up with their school-mates as normal children would do. This might affect their normal social interaction with their peers which might eventually lead to social isolation. Besides, these children also had fewer opportunity to participate in community activities as other children did. Taking these factors together, apparently they had fewer opportunity to practise social skills in either a school or non-school social setting which may have in turn affect their relationship with peers.

Self-maintenance, non-academic adaptation

The leukaemic children in the present study did not score significantly different from the non-ill comparison group in the Non-academic school performance, Self-maintenance, and the Earner-consumer subscales. These three subscales mainly measure the child's age-appropriate self-care abilities and level of independence (Manual of ABIC, 1982).

Contrast with their comparatively low level of adaptation in the academic achievement and social relation, their illness did not seem to have effect on their self-care abilities and growing independence. One of the factors may be the illness leukaemia, unlike other illness, did not cause physical disabilities that would lead to restriction in physical mobilities or physical handicaps. Apart from this, it is suspected that, knowing their own child is "different" from the normal child, these parents might have intentionally pay greater effort in training their children to be independent in taking care of themselves. There is no research study available in this regard. However, this might be an area that is worth investigating.

Overall adaptation and self-esteem of leukaemic children

The present study results showed that the overall social adaptation of the leukaemic children is lower than the non-ill children of similar age. Contrast with a study (JAMA, 1988) in which the parent subjects did not acknowledge the social skills deficit in their leukaemic children, the parents in the present study did observe the social inadequacies in their leukaemic children. Besides, while the leukaemic children themselves did not report lower self-esteem, their social adaptation as reported by their parents was at a lower level as compared with the non-ill children.

In this connection, family functioning may be an important factor that affects the sick child's social adjustment. While information on the effect of family functioning on the adjustment of leukaemic children is unavailable, studies on children suffering other types of chronic disease will help to throw light on the issue. Some research studies on children with CF are not as maladjusted as has been reported (Drotar, Doershuk, Stern, Boat, Boyer, & Matthews, 1981). The study with cystic fibrosis children undertaken by Lewis and Khaw (1982) demonstrated that family functioning was a better predictor of adjustment than was the presence of illness. For instance, the realization that their children need more protection in certain area such as social situation would make the parents more protective toward their children, hence have impact on their social adaptation.

Relation between self-esteem and social adaptation within the leukaemic patient group

Results of the present study showed that while the children subjects reported no difference in self-esteem, their level of social adaptation level as reported by their parents is lower than the children in the non-ill comparison group. One may suspect that this result is due to the methodology problem as the measurement of their level of social adaptation is a parent-report measure. There may be over-reporting of maladaptive

behaviours in the parents of the leukaemic children. On the other hand, the fact that there were significant difference in only certain areas of social adaptation and not all the areas of social adaptation may help to minimize this probability.

Within the patient group, those children with higher self-esteem did score significantly better in their global social adaptation, particularly in aspects of peer-relation and earner-consumer. Since research study in this area is not available, it is speculated that in some other areas of social functioning like self-maintenance and community participation, parents; attitude and involvement might exert relatively greater and direct influence on the children's performance. For instance, realizing their children are physically ill, they might tend to protect their children from environment other than family while intentionally train up their self-care abilities. On the contrary, a child's relationship with his or her peers demands much more of the person's self. In addition, the settings in which peer relationship develops often is outside family and are not easily amenable to parental manipulation, for instance, at school. If, as suggested in some research studies that intimate peer relation is closely related to a person's social functioning (Buhrmester, 1990; Riggio, Throckmorton, & Depaola, 1990), and that enhancing a person's self-esteem resulted in improvement in his or her social adaptation (Hathaway and Rhodes, 1979; Jones, Gray, & Jospotre, 1982), it is worthwhile to do something to help the low self-esteem leukaemic children increasing their self-esteem.

Conclusion

The present result showed that the leukaemic children did not differ from the normal non-ill children in the measures of self-esteem and trait anxiety. However, they did score poorer in some areas of social adaptation, especially peer-relationship and community involvement. Mediating variable of family functioning is discussed. As suggested by some other researchers, there is tendency for sick children to be overprotected by their mother who compensate for their feelings of guilt and helplessness by being more tolerant and less likely to use consistent discipline. This could have the effect of making these children more prone to developing behavior problems without necessarily affecting the way they feel about themselves. Hence, instead of making generalized statement about the psychological abnormality of the leukaemic children, the consideration of environmental factors should be an integral part of the long-term treatment of chronic disease (Bedell et al., 1977).

Limitation of this study

The present study only used the A-Trait Inventory in measuring the subjects' level of anxiety in order to avoid making the questionnaire too long which might affect the subjects's motivation in completing it. However, in doing so, the information from the A-State Inventory which yield valuable information on their state anxiety to cross-validate their anxiety level is

missing. In fact, the inclusion of the A-State Inventory might still be acceptable to the subjects, hence would be desirable if similar study is carried out in the future. Besides, though the Adaptive Behavior Inventory for Children used in the present study has been validated across different ethnic groups in the western society and reported to be relatively free of cultural biases, its validity with the Chinese population is still not certain.

Due to the time constraint, the present study used only one non-ill group as the comparison group. Besides, its selection is by method of convenience. In other words, they are used as the comparison group because they are readily available and accessible. If time is allowed, the use of a better selected comparison group would be desirable which would better the validity of the result. In addition, if available, the inclusion of a chronically but not fatally ill child patients group such as the orthopaedic patients would serve better another comparison group. It is because they might share similar but different health-related experience.

In the present study, the sample size of the patient group is relatively small due to the availability and accessibility of the limited clinical subjects within a short period of time. To increase the generalizability of the study result, a larger number of patient subjects should be included, probably within a longer period of research time.

As earlier mentioned, the difference in the leukaemic patients' self-esteem and their parents' reporting on their socially adaptive behaviours may be result of methodological problem of this study. The measurement scale of the children's social adaptation in the present study is a parent-report measure. However, the parents of the leukaemic children may be inaccurate in their observations if they have become worrying parents throughout the years of taking care of their sick children. Though there is reason to use a parent-report measure in this study, it would be better to control this methodological issue in similar study in the future by means of, for example, measuring the parents' self-esteem as well or seeking additional source of information, for instance, from the teachers.

In the present study, the information of the socio-economic background of the adult subjects such as their occupations and incomes has not been collected. Meanwhile, the Adaptive Behavior Inventory for Children used in the present study is relatively open to subjectivity of the parents. To avoid contamination of the results, the variable of the parent subjects' socio-economic status should better be controlled in future study as it might affect the perception of their children's social adaptation level via different expectations held towards their children.

REFERENCES

- American Medical Association (1988) Fate of Childhood Cancer Survivors Come Under Increasing Scrutiny. Journal of the American Medical Association, 260, 3246-3247.
- Baehner, R. L. (1978) Hematologic Malignancies: Leukemia and Lymphoma. In C.H. Smith (Ed.), Blood Diseases of Infancy and Childhood. (4th ed) St. Louis, Mo: Mosby.
- Bailey, L. W., & Edwards, D. (1975) Psychological considerations in maxillo-facial prosthetics. J. Prosth. Dent., 34, 533-538.
- Baker, L. S., Roland, C. G., & Gilchrist, G. S. (1978) You and Leukemia: a day at a time. Saunders: Philadelphia.
- Bay, B. (1983) Predicting drug abuse: Review and reformation. The International Journal of the Addictions, 18(2), 223-233.
- Bedell, J. R., Giordani, B., Amour, J. L., Tavormina, J. H., Zoger, S., & Mikkelsen, C. (1969) Childhood leukemia: Emotional impact on patient and family. New England Journal of Medicine, 280, 414-418.
- Bedell, J. R., Giordani, B., Amour, J. L., Tavormina, J., & Boll, T. (1977) Life Stress and the Psychological and medical adjustment of chronically ill children. Journal of Psychosomatic Research, 21, 237.
- Bernstein, D. M. (1971). After transplantation - The child's emotional reactions. American Journal of Psychiatry, 127, 109.
- Berry, D. H. (1974) The child with acute leukemia. American Family Physician, 10, 129-135.
- Binger, C. M., Ablin, A. R., Feuerstein, Q. C., Kushner, J. H., Zoger, S., & Mikkelsen, C. (1969) Childhood leukemia: emotional impact on patient and family. New England Journal of Medicine, 280, 414-418.
- Bond, A. and Lader, M. (1976) Self concepts in anxiety states. British Journal of Medical Psychology, 49, 275-279.
- Buhrmester, D. (1990) Intimacy of friendship interpersonal competence, and adjustment during preadolescence and adolescence. Child Development, 41(4), 1101-1111.

- Burton, L. (1975) The Family Life Of Sick Children: A study of families coping with chronic childhood disease. London: Routledge & Kegan Paul.
- Buss, A. H. (1962) Critique and notes: Two anxiety factors in psychiatric patients. Journal of Abnormal and Social Psychology, 65, 426-427.
- Buss, D. M. (1990) Toward a Biologically Informed Psychology of Personality. Journal of Personality, 58(1), March.
- Carey, R. G. (1974) Adjustment in Terminal Patients: a quantitative approach. Journal of Counselling Psychology, 21(5), 433-439.
- Cattell, R. B. (1966) Pattern of change: Measurement in relation to state dimension, trait change, lability, and process concepts. Handbook of Multivariate Experimental Psychology. Chicago: Rand McNally & Co..
- Cattell, R. B., & Schneier, I. H. (1963) Handbook for the IPAT Anxiety Scale. (2nd Ed.). Champaign, III.: Institute for Personality and Ability Testing.
- Cattell, R. B., & Scheier, I. H. (1961) The meaning and measurement of neuroticism and anxiety. New York: Ronald Press.
- Cheung, P. C. & Lau, S. (1985) Self-Esteem: Its Relationship to the Family and School Social Environments Among Chinese Adolescents. Youth and Society, 16(4), 438-456.
- Childer, P. and Wimmer, M. (1971) The concept of death in early childhood. Child Development, 43, 705.
- Clemow, L. P., King, A. R., & Brantley, P. J. Psychological Factors in Childhood Illness. In A. E. Adams & P. B. Sutker (Eds.) Comprehensive Handbook of Psychopathology. New York: Plenum Press.
- Cohen, F., & Lazarus, R. S. (1979) Coping with the stresses of illness. In G. C. Stone, F. Cohen, & N. E. Adler(Eds.). Health Psychology, 217-255. Jossey-Bass, San Francisco, Calif..
- Coopersmith, S. (1967) Antecedents of self-esteem. San Francisco: Freeman.
- Coopersmith, S. (1981) The antecedents of self-esteem (Rev. Ed.). Palo Alto, CA:Consulting Psychologist Press.
- Cowen, L., Mok, J., MacMillan, M., Simmon, R., & Levison, H. (1986) Psychologic Adjustment of the Family with a member who has cystic fibrosis. Pediatrics, 77(5), 745-753.

- Davison, G. C., & Neale, J. M. (1986) Abnormal Psychology (4th Ed.). John Wiley & Sons: New York.
- Derogatis, L. R., Akeloff, M. D., & Melisaratos, N. (1979) Psychological coping mechanisms and survival time in metastatic breast cancer. Journal of the American Medical Association, 242, 1504-1508.
- Diller, L. (1972) Psychological aspects of physically handicapped children. In B. B. Wolman, (Ed.), Manual of Child Psychology, McGraw-Hill, New York.
- Dobbs, R. H. (1970) Social aspects of cystic fibrosis. Respiration, 27 suppl, 196-7.
- Dorner, S. (1976) Adolescents with spina bifida: How they see their situation. Arch. Dis. Child., 51, 439-444.
- Drotar, D., Doershuk, C. F., Stern, R. C., Boat, T. F., Boyer, W., & Matthews, L. (1981) Psychosocial Functioning of Children with Cystic Fibrosis. Pediatrics, 67(3), 338-343.
- Eiser, C. (1979) Psychological Development of the child with Leukemia: A Review. Journal of Behavioral Medicine, 2(2), 141-157.
- Epstein, S. (1973) The Self-Concept Revisited: Or a Theory of a Theory. American Psychologist, May, 404-416.
- Fife, B., Norton, J., & Groom, G. (1987) The family's adaptation to childhood leukemia. Social Science and Medicine, 24(2) 159-168.
- Fox, B. H. (1983) Current theory of psychogenic effects on cancer incidence and prognosis. Journal of Psychosocial Oncology, 1, 17-31.
- Futterman, E. H., Hoffman, I. (1973) Crisis and adaptation in the families of fatally ill children. In E. J. Anthony, & C. Koupernik (Eds.) The child in his family: the impact of disease and death. New York: John Wiley and Son, 127-43.
- Green, M. (1965) The management of long-term nonlife-threatening illnesses. In M. Green & R. S. Haggerty (Eds.) Ambulatory Pediatrics. W. B. Saunders, Philadelphia.
- Geer, S. & Burgess, C (1987) A Self-esteem Measure for Patients with Cancer. Psychology and Health, Vol.1, pp. 327-340.

- Hathaway, W. E., & Rhodes, C. N. (1979) Disadvantaged learners : The nature of the problem and some potential solutions. (Report No. RC012952). Alberta Department of Education Edmonton. Planning and Research Branch. (Eric Document Reproduction Service No. ED207 773)
- Hinton, J. (1973) Bearing Cancer. British Journal of Medical Psychology, 46, 105-113.
- Hobfoll, S. E., & Walfisch, S. (1984) Coping with a threat to life: A longitudinal study of self-concept, social support, and psychological distress. American Journal of Community Psychology, 12, 87-100.
- Hodgson, R., & Rachman, S. (1974) II Desynchrony in measures of fear. Behaviour Research and Therapy, 12, 319-326.
- Hollis, F., & Woods, M. E. (1981) Casework: A Psychosocial Therapy. New York:Random House.
- Holroyd, H., & Guthrie, D. (1986) Family stress with chronic childhood illness: cystic fibrosis, neuromuscular disease, and renal disease. Journal of Clinical Psychology, 42, 552-561.
- Hong Kong Annual Digest of Statistics, 1985-1989.
- Jamison, R. N., Lewis, S., & Burish, T. G. (1986) Psychological Impact Of Cancer On Adolescents: Self-Image, Locus Of Control, Perception Of Illness And Knowledge Of Cancer. Journal of Chronic Disease, 39(8), 609-617.
- Johnes, B. E., Gray, G. A., & Jospotre, J. (1982) Survey of psychotherapy with black men. American Journal of Psychiatry, 139(9), 1174-1177.
- Kashani, J. H., Barbero, G. J., Wilfley, D. E., Morris, D. A., & Shepperd, J. A. (1988) Psychological concomitants of cystic fibrosis in children and adolescents. Adolescent, 23(92), 873-880.
- Kellerman, J., Zeltzer, L., Ellenberg, L., Dash, J. and Rigler, D. (1980) Psychological effects of illness in adolescence. I. Anxiety, self-esteem, and perception of control. The Journal of Pediatrics, 97(1), 126-131.
- Kennedy, W. A. (1965) School phobia: Rapid treatment of 50 cases. Journal of Abnormal Psychology, 70, 285-289.
- Koocher, G. P., O'Malley, J. E. (1981) The Damocles Syndrome: Psychosocial consequences of Surviving Childhood Cancer. New York: McGraw-Hill.

- Kucera, J. (1971) Leukemia and twinning tendency in families of children with Down's syndrome. Journal of Mental Deficiency Research, 15, 77-80.
- Kupst, M. J., & Schulman, J. K. (1988) Long-term coping with pediatric leukemia: a six-year follow-up study. Journal of Pediatric Psychology, 13(1) 7-22.
- Lam, T. K., & Yuen, M. P. (1987) Treatment of childhood acute lymphoblastic leukemia. The Hong Kong Journal of Paediatrics, 4, 119-124.
- Lampert, F., Henze, G., Langermann, H-J., Schellong, F., Gadner, H., & Riehm, H-J. (1984) Acute Lymphoblastic Leukemia: Current Status of Therapy in Children. In E. Thiel, & S. Thierfelder (Eds.) Recent Results in Cancer Research: Leukemia. Springer-Verlag Berlin Heidelberg.
- Lang, P. J. (1968) Fear reduction and fear behavior: Problems in treating a construct. Research in Psychotherapy, 3, 90-102.
- Lanskey, S. B., Lowman, J. T., Tribhawan Vats, & Gyulay, J. E. (1975) School phobia in children with malignant neoplasms. American Journal Dis. Child, 129, 42-46.
- Lau, R. R., & Klepper, S. (1988) The Development of Illness Orientations in Children Aged 6 through 12. Journal of Health and Social Behavior, 29, 149-168.
- Lazarus, R. S., & Launier, R. (1978) Stress-related transactions between person and environment. In L. A. Pervin & M. Lewis (Eds.) Perspectives in interactional psychology. New York: Plenum Press.
- Lee, W. H., Lieh-Mak, F., Hung, K. M., & Luk, S. L. (1984) Death Anxiety In Leukemic Chinese Children. International Journal of Psychiatry in Medicine, 13(4), 281-289.
- Lesley, A., Slavin, O'Malley, E., Koocher, G. P., Foster, D. J. (1982) Communication of the Cancer Diagnosis to Pediatric Patients: Impact on Long-Term Adjustment. American Journal of Psychiatry, 139(2), 179-183.
- Lewis, C., & Lewis, M. (1982) Children's Health-Related Decision Making. Health Education Quarterly, 9, 225-237.
- Lewis, B. L., & Khaw, K-T. (1982). Family functioning as a mediating variable affecting psychosocial adjustment of children with cystic fibrosis. The Journal of Pediatrics, 101(4), 636-640.

- Lipowski, Z. J. (1970) Physical illness. the individual and the coping process. Psychiatric Medicine, 1, 91.
- Magni, G., Carli, M., Leo, D. D., Tshilolo, M., & Zanesco, L. (1986) Longitudinal Evaluations of Psychological Distress in Parents of Children with Malignancies. Acta Paediatr Scand, 75, 283-288.
- Magni, G., Messina, C., Leo, D. D., Mosconi, A., & Carli, M. (1983) Psychological distress in parents of children with acute lymphatic leukemia. Acta Psychiatr Scand, 68, 297-300.
- Marks, I. M. (1965) Patterns of Meaning in Psychiatric Patients. London: Oxford University Press.
- Marky Ildiko. Children with malignant disorders and their families: a study of the implication of the disease and its treatment on everyday life. Department of Pediatrics 1, University of Goteborg, Goteborg, Sweden.
- Mattsson, AKE. (1977) Long-Term Physical Illness in Childhood: A Challenge to Psychological Adaptation. In R. H. Moos (Ed.) Coping with physical illness. Plenum medical book company, New York.
- Mattsson, A., & Gross, S. (1966) Social and behavioral studies on hemophiliac children and their families. Journal of Pediatrics, 68, 952.
- Mattsson, A., Gross, S., & Hall, T. W. (1971) Psychoendocrine study of adaptation in young hemophiliacs. Psychosomatic Medicine, 33, 215.
- McCarthy, M. (1975) Social aspects of treatment in childhood leukemia. Social Science and Medicine, 9, 263-269.
- Mechanics, D. (1980) Education, Parental Interest and Health Perceptions and Behavior. Inquiry, 17, 331-38.
- Mercer, J. R., & Lewis J. F. (1977) ABIC Manual: Adaptive Behavior Inventory for Children. The Psychological Corporation: New York.
- Moos, R. H., & Tsu, V. D. (1977) The crisis of physical illness: An overview. In R.H. Moos (Ed.) Coping with physical illness. New York:Plenum Press.
- Murstein, B. I. (1960) The effect of long term illness of children on the emotional adjustment of parents. Child Development, 31, 157-171.

- Natterson, J. M., & Knudson, A. G. (1960) Observations concerning fear of death in fatally ill children and their mothers. Psychosomatic Medicine, 22, 456-465.
- Olds, S. W., & Papalia, D. E. (1986) Human Development (3rd ed.). McGraw-Hill International Edition.
- Pierce, M. I., Borges, W. H., Heyn, R., Wolff, J. A., and Gilbert, E. S. (1969) Epidemiological factors and survival experience in 1,770 children with acute leukemia. Cancer, 23, 1296.
- Pless, I. B., & Roughman, K. J. (1971) Chronic illness and its consequences: observations made on three epidemiologic surveys. Journal of Pediatrics, 79, 351.
- Pritchard, M. (1974) Reaction To Illness In Long Term Haedodialysis. Journal of Psychosomatic Research, 18, 55-67.
- Riggio, R. E. , Throckmorton, B., & DePaola, S. (1990) Social skills and self-esteem. Personality and Individual Differences, 11(8), 799-804.
- Rogers, C. (1951) Client-centered therapy. New York: Houghton Mifflin.
- Rutter, B. M. (1977) Some psychological concomitants of chronic bronchitis. Psychological Medicine, 7, 459-464.
- Senescu, R. A. (1963) The Development Of Emotional Complications In The Patient With Cancer. Journal of Chronic Disease, 16, 813-832.
- Spielberger, C. D. (1966) Theory and research on anxiety. In C. D. Spielberger (Ed.). Anxiety and behavior. New York: Academic Press.
- Spielberger, C. D. (1972) Anxiety as an emotional state. In C. D. Spielberger (Ed.), Anxiety: Current trends in theory and research (Vol. 1). New York: Academic Press.
- Spielberger, C. D. (1976) The nature and measurement of anxiety. In C. D. Spielberger & R. Diaz-Guerrero (Eds.). Cross-cultural anxiety. Washington, D.C.: Hemisphere/Wiley.
- Spielberger, C. D., Gorusch, R. C., & Lushene, R. E. (1970) Manual for the State-Trait Anxiety Inventory(Self-Evaluation Questionnaire). Palo Alto, CA: California: Consulting Psychologists Press.

- Spinetta, J. J. (1974) The dying child's awareness of death: a review. Psychological Bulletin, 81(4), 256-260.
- Spinetta, J. J. (1982) Behavioral and psychological research in childhood cancer: An overview. Cancer, 1, suppl., 50, 1939-43.
- Spinetta, J. J., & Maloney, L. J. (1975) Death Anxiety in the Outpatient Leukemic Child. Pediatrics, 56(6), 1034-1037.
- Spinetta, J. J., Rigler, D., & Karon, M. (1973) Anxiety in the dying child. Pediatrics, 52, 841-845.
- Spirito, A., Stark, L. J., Cobiella, C., & Drigan, R. (1990) Social adjustment of children successfully treated for cancer. Journal of Pediatric Psychology, 15(3), 359-371.
- Tavormina, J. B., Kastner, L. S. Slater, P. M., & Watt, S. L. (1976) Chronically ill children - A psychologically and emotionally deviant population. Journal of Abnormal Child Psychology, 4, 99-110.
- Taylor, S. (1983) Adjustment to threatening events: a theory of cognitive adaptation. American Psychologist, 38, 1161-1173.
- Tempelaar, R., De Haes, J. C. J. M., De Ruiter, J. H., Bakker, D., Van Den Heuvel, W. J. A., & Van Nieuwenhuizen, M. G. (1989) The Social Experiences of Cancer Patients Under Treatment: A Comparative Study. Social Science and Medicine, 29(5), 635-642.
- Till, M. M., Hardisty, R. M., & Pike, M. C. (1973) Long survivals in acute leukemia. Lancet, 534-8, March 10.
- U.S. Bureau of the Census (1986) Statistical abstract of the United States:1986 (106th edition). Washington, D.C. U.S. Government Printing Office.
- Walsh, P. A., & Walsh, A. (1987) Self-Esteem and Disease Adaptation among Multiple Sclerosis Patients. The Journal of Social Psychology, 127(6), 669-671.
- Williams, J. (1978) Doubters, delinquents and dropouts: Can they be helped through improved self-concepts? (Report No. EA 010 393). A paper presented at the annual meeting of the National Association of Secondary School Principals. Anaheim, California (ERIC Document Reproduction Services No. ED 150 752)
- Yang, K., & Bong, M. H. (1980) Ethnic affirmation by Chinese bilinguals. Journal of Cross Cultural Psychology, 11, 411-425.

LIST OF TABLES

Table 1.	Total number and sex of the child subject	41
Table 2.	Age of the child subjects	42
Table 3.	Education of the child subjects	44
Table 4.	Mean age of education of the two groups	45

APPENDIX I

Education of leukaemia children

SEX	AGE	EDUCATION
M	7-6	P.1
M	7-6	P.2
M	7-7	P.1
M	7-8	P.1
M	8-3	P.2
M	8-4	P.2
M	8-5	P.2
M	9-1	P.2
M	9-3	P.3
M	10-3	P.3
M	10-4	P.4
M	10-5	P.4
M	10-5	P.3
M	11-2	P.5
M	11-7	P.5
F	8-1	P.2
F	8-2	P.3
F	8-3	P.2
F	8-4	P.2
F	9-6	P.3
F	9-8	P.3
F	10-2	P.3
F	10-6	P.4

自我觀量表

姓名：_____ 年齡 _____ 歲 性別 _____

提示：以下 25 題是關於你對自己的看法，請照實作答。若願意似你的情況，請在（是）格內作（✓）號；若願意不似你的情況，請在（非）格內作（✓）號；若情況介乎二者之間，請自作估計，選較近的一方。

	是	否
1. 我常常希望自己是另外一個人。.....	<input type="checkbox"/>	<input type="checkbox"/>
2. 在面對一群人時，我總難以暢所欲言。.....	<input type="checkbox"/>	<input type="checkbox"/>
3. 如可能的話，我會盡量在多方面自我改進。.....	<input type="checkbox"/>	<input type="checkbox"/>
4. 對我來說，下決心不是一件太難的事。.....	<input type="checkbox"/>	<input type="checkbox"/>
5. 別人樂於和我在一起。.....	<input type="checkbox"/>	<input type="checkbox"/>
6. 在家中，我容易感到不快樂。.....	<input type="checkbox"/>	<input type="checkbox"/>
7. 我需要相當長時間，才能適應新事物。.....	<input type="checkbox"/>	<input type="checkbox"/>
8. 在同輩中，我很受注目。.....	<input type="checkbox"/>	<input type="checkbox"/>
9. 我的家人對我期望太高。.....	<input type="checkbox"/>	<input type="checkbox"/>
10. 我的感受，通常都被人重視和關注。.....	<input type="checkbox"/>	<input type="checkbox"/>
11. 對人對事，我很易讓步和妥協。.....	<input type="checkbox"/>	<input type="checkbox"/>
12. 做我是頗不容易的（我的日子不好過）。.....	<input type="checkbox"/>	<input type="checkbox"/>
13. 我對生活茫無頭緒。.....	<input type="checkbox"/>	<input type="checkbox"/>
14. 他人常常附和我的主意。.....	<input type="checkbox"/>	<input type="checkbox"/>
15. 我對自己缺乏信心。.....	<input type="checkbox"/>	<input type="checkbox"/>
16. 我曾多次想離開家庭，去獨立生活。.....	<input type="checkbox"/>	<input type="checkbox"/>
17. 工作常常困擾着我。.....	<input type="checkbox"/>	<input type="checkbox"/>
18. 我的相貌，不如一般人的好看。.....	<input type="checkbox"/>	<input type="checkbox"/>
19. 心中有事，我多半會說出來。.....	<input type="checkbox"/>	<input type="checkbox"/>
20. 我的家人了解我。.....	<input type="checkbox"/>	<input type="checkbox"/>
21. 我不如普通人的受別人喜愛。.....	<input type="checkbox"/>	<input type="checkbox"/>
22. 我常感覺到家庭的壓力。.....	<input type="checkbox"/>	<input type="checkbox"/>
23. 對於工作，我常感氣餒，難堅持到底。.....	<input type="checkbox"/>	<input type="checkbox"/>
24. 外間事物，通常不會令我感到煩惱。.....	<input type="checkbox"/>	<input type="checkbox"/>
25. 我是不可依靠的人。.....	<input type="checkbox"/>	<input type="checkbox"/>

APPENDIX III

以下是一些小朋友用來形容他們自己的句子。小心閱讀各句子和決定這些句子是從不，有時，還是常常對你來說是對的。然後把x放在最能形容你的通常情況的句子上。答案是有時對或錯的，請別花太多時間在某一句子上。記著你的選擇應以你通常的情況為依歸。

1. 我擔心做錯事。	<input type="checkbox"/> 從不	<input type="checkbox"/> 有時	<input type="checkbox"/> 常常
2. 我感到像哭。	<input type="checkbox"/> 從不	<input type="checkbox"/> 有時	<input type="checkbox"/> 常常
3. 我感到不快樂。	<input type="checkbox"/> 從不	<input type="checkbox"/> 有時	<input type="checkbox"/> 常常
4. 我有困難下決定。	<input type="checkbox"/> 從不	<input type="checkbox"/> 有時	<input type="checkbox"/> 常常
5. 我對面對自己的問題感到困難。	<input type="checkbox"/> 從不	<input type="checkbox"/> 有時	<input type="checkbox"/> 常常
6. 我過度擔心。	<input type="checkbox"/> 從不	<input type="checkbox"/> 有時	<input type="checkbox"/> 常常
7. 我在家感到心緒煩亂。	<input type="checkbox"/> 從不	<input type="checkbox"/> 有時	<input type="checkbox"/> 常常
8. 我害羞。	<input type="checkbox"/> 從不	<input type="checkbox"/> 有時	<input type="checkbox"/> 常常
9. 我感到煩惱。	<input type="checkbox"/> 從不	<input type="checkbox"/> 有時	<input type="checkbox"/> 常常
10. 不重要的事情在我腦中煩擾我。	<input type="checkbox"/> 從不	<input type="checkbox"/> 有時	<input type="checkbox"/> 常常
11. 我擔心讀書。	<input type="checkbox"/> 從不	<input type="checkbox"/> 有時	<input type="checkbox"/> 常常
12. 我對決定事情有困難。	<input type="checkbox"/> 從不	<input type="checkbox"/> 有時	<input type="checkbox"/> 常常
13. 我注意到自己心跳快速。	<input type="checkbox"/> 從不	<input type="checkbox"/> 有時	<input type="checkbox"/> 常常
14. 我暗地裏害怕。	<input type="checkbox"/> 從不	<input type="checkbox"/> 有時	<input type="checkbox"/> 常常
15. 我擔心我父母。	<input type="checkbox"/> 從不	<input type="checkbox"/> 有時	<input type="checkbox"/> 常常
16. 我的手心出汗。	<input type="checkbox"/> 從不	<input type="checkbox"/> 有時	<input type="checkbox"/> 常常
17. 我為將會發生的事情擔心。	<input type="checkbox"/> 從不	<input type="checkbox"/> 有時	<input type="checkbox"/> 常常
18. 夜間我難以入睡。	<input type="checkbox"/> 從不	<input type="checkbox"/> 有時	<input type="checkbox"/> 常常
19. 我的胃有特別的感覺。	<input type="checkbox"/> 從不	<input type="checkbox"/> 有時	<input type="checkbox"/> 常常
20. 我憂慮其他人對我的想法。	<input type="checkbox"/> 從不	<input type="checkbox"/> 有時	<input type="checkbox"/> 常常

親愛的家長：

我是中文大學臨床心理學系研究生，得貴子女就讀學校協助，進行一項學齡兒童在個人學業、家庭及社群方面適應的研究。一切資料均會保密和供集體分析之用，並於分析完畢後銷毀，希望貴家長能協助提供資料。

多謝你的合作和幫助。

中文大學臨床心理學系研究生

唐秀蘭

1. 基本資料

性別：☐男 ☐女

班級：_ _ _ _ _ 學號：_ _ _ _ _

年齡：_ _ _ _ _

父親最高學歷：☐小學程度或以下 ☐中學程度 ☐專上或大學

母親最高學歷：☐小學程度或以下 ☐中學程度 ☐專上或大學

你有多少兄弟姊妹（包括你自己）：_ _ _ _ _人

「我們將會問及有關-----的活動，在家中或住所附近地方他們會做的事情。我們會問一些問題和給予答案讓你選擇。請選擇最能描述你的孩子會做那種事情的答案。假使你不准許你的孩子做某些事情，或他沒有機會做某種事情或活動，又或者你不清楚他有沒有類似的活動。請讓我們知道。」

1. 有些孩子害怕很多東西，你的孩子-----是否害怕
----很多東西 ----有些東西 ----沒有什麼東西？
2. 孩子會和某些人相處比較好，----和他的兄弟相處怎樣？
----十分好 ----幾好 ----不十分好
3. 孩子和他的姐妹相處得怎樣？
----不十分好 ----幾好 ----十分好
4. 孩子跟爸爸相處的情況怎樣？
----幾好 ----十分好 ----不十分好
5. 你和-----相處情況怎樣？
----不十分好 ----十分好 ----幾好
6. 他/她和鄰居的成年人相處怎樣？
----十分好 ----不十分好 ----幾好
7. -----和鄰居孩子相處怎樣？
----十分好 ----不十分好 ----幾好
8. -----參與住所附近的歌唱或音樂小組或校外的歌唱小組的次數？
----從沒有 ----間中 ----經常
9. 在學校，孩子和學校的小朋友相處的情況？
----幾好 ----不十分好 ----十分好
10. -----跟學校的老師相處怎樣？
----幾好 ----十分好 ----不十分好
11. -----是否曾經和警察有麻煩？
----經常 ----間中 ----從沒有
12. -----曾否接受兒童感化令？
----二次或以上 ----一次 ----從沒有

13. 孩子有時會因為不喜歡上學而不回學校，你的孩子曾否未得你批准而不上學？
----一星期一次或上 ----每個月數次 ----甚少或從不
14. -----遲到上課的情況是？
----約一星期一次或以上 ----每個月數次 ----甚少或從不
15. 每當你問-----曾經做過的事，他會否告訴你事實的真相？
----間中 ----經常 ----每次都會
16. -----會否幫鄰居老人或傷殘的人？例如倒垃圾、或做些家庭雜務？
----一星一次或以上 ----每個月數次 ----甚少或從不
17. -----見到和他差不多年紀的新朋友時，他會否
----通常主動接觸別人 ----有時主動接觸別人 ----通常等別人主動接觸他
18. 假如其他小孩子無意中傷害到-----，他會
----生氣和不開心一段長時間 ----生氣和不開心一段短時間
----立刻像沒事發生一樣
19. 需要排隊輪候時，他會變得
----十分不耐煩和煩躁 ----頗為不耐煩、煩躁 ----沒有因此感到煩躁
20. -----做事遇到困難時，他會
----通常繼續嘗試，直到成功為止 ----有時會繼續嘗試 ----通常會放棄
21. 其他小孩子是否經常取笑-----？
----經常 ----有時 ----從不
22. -----和那些小朋友一起玩耍
----年紀比他小的 ----和他差不多年紀的 ----他很少和其他小朋友一起玩
23. -----有多少次因玩得太劇烈，弄傷了其他小孩子？
----常常 ----有時 ----很少
24. -----會否在表演或宴會等場合，提供娛樂給其他人？
----常常 ----間中 ----從不
25. -----和同年紀的孩子一起玩耍或活動時，他會扮演領導的角色？
----常常 ----間中 ----從不

26. -----和他同年紀的小孩子比較，你認為-----是
----十分活躍， ----較為活躍 ----不比其他孩子活躍
27. 有多少時候， -----會在開始一個遊戲或做一件事後，把事情完成？
----大部份時間會這樣 ----一半時候會這樣 ----少於一半時間這樣
28. 其他孩子一起玩耍時， -----會不會獨自離開？
----常常 ----有時 ----從不
29. 當 -----正在做一件事情時，他會不會
----十分容易分心 ---- 幾容易分心 ----很少分心
30. -----和一群小朋友一起時，他會否
----常常有話說 ----有時會有話說 ----通常沉默
31. -----是否因發夢、怕黑等，在晚上變得很驚慌或害怕？
----常常 ----間中 ----差不多從不
32. -----會否和年紀比較大和會駕車的朋友，去郊外旅行？
----從不 ----間中 ----常常
33. 當 -----在一群人面前表演，他會表現得
----十分緊張和害怕 ----有些緊張和害怕 ----好像頗為享受
34. 其他孩子會否丟下 -----，不和他一起玩
----常常 ----間中 ----從不
35. 當 -----和其他小孩子爭執或打架，他會否生氣或不開心？
----幾日 ----幾個小時 ----很短時間如此

142. 到鄰近地方以外的地方探望親屬或朋友時，-----是否常常
-----和年紀較大的人一同前往 -----和同年紀的孩子一同前往 -----獨自前往
143. 在餐廳內，-----會否自己點菜或叫東西吃？
-----不須幫忙 -----須要少許幫忙 -----別人代他叫東西吃
144. -----會否和朋友在某個特別地方見面和玩耍，例如公園、街道、校車站等？
-----有時 -----甚少或從不 -----常常
145. -----會否去公共圖書館工作或閱讀書籍？
-----從不 -----常常 -----有時
146. -----會否和朋友一起，清理出一片空地方或建造堡壘來玩耍？
-----從不 -----常常 -----有時
147. -----不能立刻得到他想要的東西時，他是否變得生氣和鬧彆扭？
-----多數會 -----有時會 -----幾乎從不
148. -----前往觀看電影、球類比賽或社區上類似活動時，您是否
-----獨自前往或與同年紀朋友一起 -----與年紀較孩子或成年人一起
-----他從不參加類似活動
149. -----會否參與或幫忙學校活動，例如計分、售賣小食、宣佈遊戲等？
-----有時 -----常常 -----從不
150. -----會否在家中溫習、準備測驗或考試？
-----間中 -----從不 -----常常
151. -----會否儲錢購買唱片、單車、遊戲、收音機、衣服等物品？
-----間中 -----常常 -----從不
152. -----會否在暑期時學習手工、體育遊戲、游泳等東西？
-----從不 -----有些暑假會 -----多數暑期會
153. 除學校基本課本以外，-----會否利用公共圖書館或家中的書籍來幫助做功課？
-----從不 -----間中 -----常常
154. -----會否和朋友計劃下課後或週末做什麼活動？
-----從不 -----有時會 -----常常會

155. 要找尋一條不熟悉的街道時，-----是否通常
-----自己找尋 -----和其他人一起找尋 -----他不會這樣做
156. -----會否幫助比他年紀小的兒童認識交通燈、停止和橫過等標誌？
-----間中 -----從不 -----常常
157. 是否代表他班上同學，出席學生會議或其他在學校舉行的會議？
-----三次或以上 -----一或二次 -----從不
158. -----是否自己修剪指甲或趾甲？
-----間中 -----從不 -----常常
159. 郵差把別人的信錯誤地派到你的家中時-----會否
-----留意到這錯誤和自己處理 -----告訊你，讓你處理
-----沒有留意到這錯誤
160. -----是否與鄰居孩子組成一些會或好朋友小組，維持幾日時間？
-----常常 -----間中 -----從不
161. 家中有東西要修理，例如更換燈泡、黏補損壞了的東西等-----是否
-----讓其他人處理 -----找人幫他處理 -----自己處理
162. 當社區、教會團體或某些會聚在一起辦事時，-----會否幫忙搬運物品或做好指派的工作？
-----常常 -----有時 -----從不
163. -----會否自己準備一些須要混和攪拌來烹調的食物，例如班、布甸之類？
-----從不 -----間中 -----常常
164. -----會否幫助家中較大型的維修工作，如油漆、貼牆紙，或其他修理？
-----要叫他才做 -----不叫他也會做 -----他不做這些工作。

CUHK Libraries



000360340